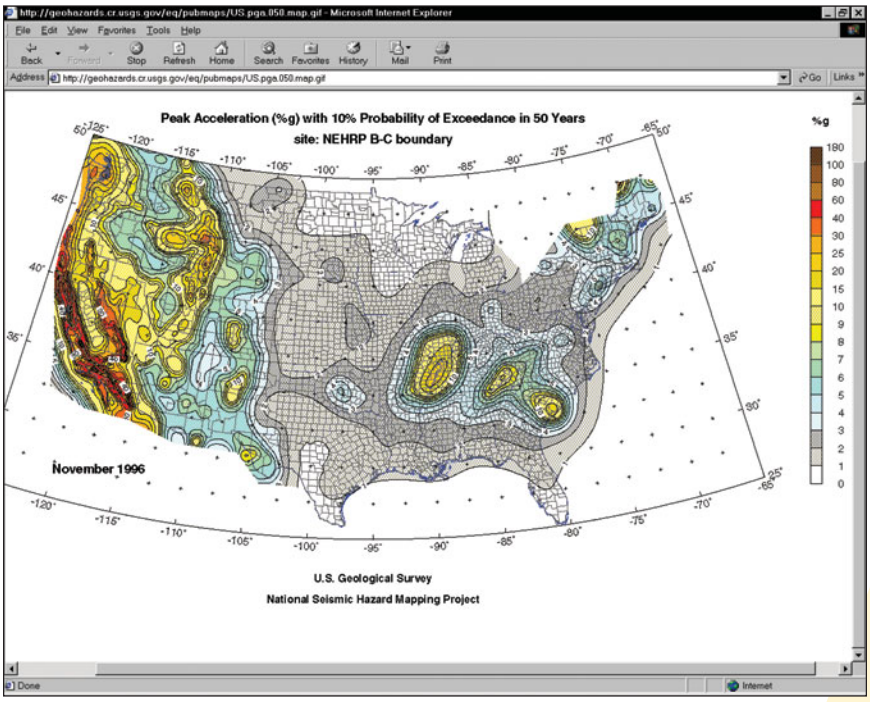
# Earthquakes

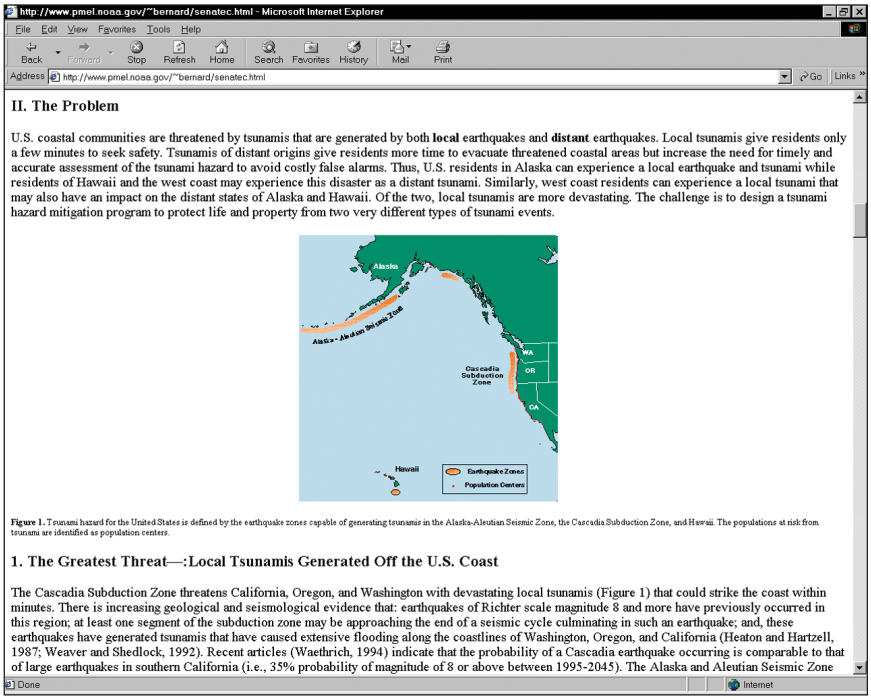



Source: http://geohazards.cr.usgs.gov/eq/pubmaps/US.pga.050.map.gif

1. Go to the http://geohazards.cr.usgs.gov/eq/pubmaps/US.pga.050.map.gif Website to determine whether you are located in an earthquake hazard zone.
2. Find the approximate location of your community or state on the seismic hazard map.
3. If you are located in an area with 2%g (peak acceleration) or less, then you have a relatively low seismic risk and can probably avoid conducting an earthquake risk assessment at this time. However, you should confirm your findings with your state geologist or emergency manager.
4. If you are located in an area with 3% g peak acceleration or more, then you should proceed to Step 2 to profile your earthquake hazard.

# Tsunamis

1. Go to the http://www.pmel.noaa.gov/~bernard/senatec.html Website. This page will show population centers on the West Coast of the United States that are at risk of tsunamis.
2. Find the approximate location of your community or state on the tsunami map.
3. If you are not located on the West Coast, a Pacific Island, or a Caribbean Island*, then you have a relatively low tsunami risk and can probably avoid conducting a tsunami risk assessment at this time. However, you should confirm your findings with your state geologist or emergency manager.
4. If you are located in communities along the shoreline, along coastal estuaries, or along rivers affected by tides in Alaska, Washington, Oregon, California, Hawaii, or Puerto Rico, then you should proceed to Step 2 to profile your tsunami hazard.



http://www.pmel.noaa.gov/~bernard/senatec.html - Microsoft Internet Explorer

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Address http://www.pmel.noaa.gov/~bernard/senatec.html

**II. The Problem**

U.S. coastal communities are threatened by tsunamis that are generated by both **local** earthquakes and **distant** earthquakes. Local tsunamis give residents only a few minutes to seek safety. Tsunamis of distant origins give residents more time to evacuate threatened coastal areas but increase the need for timely and accurate assessment of the tsunami hazard to avoid costly false alarms. Thus, U.S. residents in Alaska can experience a local earthquake and tsunami while residents of Hawaii and the west coast may experience this disaster as a distant tsunami. Similarly, west coast residents can experience a local tsunami that may also have an impact on the distant states of Alaska and Hawaii. Of the two, local tsunamis are more devastating. The challenge is to design a tsunami hazard mitigation program to protect life and property from two very different types of tsunami events.



**Figure 1.** Tsunami hazard for the United States is defined by the earthquake zones capable of generating tsunamis in the Alaska-Aleutian Seismic Zone, the Cascadia Subduction Zone, and Hawaii. The populations at risk from tsunami are identified as population centers.

**1. The Greatest Threat—:Local Tsunamis Generated Off the U.S. Coast**

The Cascadia Subduction Zone threatens California, Oregon, and Washington with devastating local tsunamis (Figure 1) that could strike the coast within minutes. There is increasing geological and seismological evidence that: earthquakes of Richter scale magnitude 8 and more have previously occurred in this region; at least one segment of the subduction zone may be approaching the end of a seismic cycle culminating in such an earthquake; and, these earthquakes have generated tsunamis that have caused extensive flooding along the coastlines of Washington, Oregon, and California (Heaton and Hartzell, 1987; Weaver and Shedlock, 1992). Recent articles (Waethrich, 1994) indicate that the probability of a Cascadia earthquake occurring is comparable to that of large earthquakes in southern California (i.e., 35% probability of magnitude of 8 or above between 1995-2045). The Alaska and Aleutian Seismic Zone

Done Internet

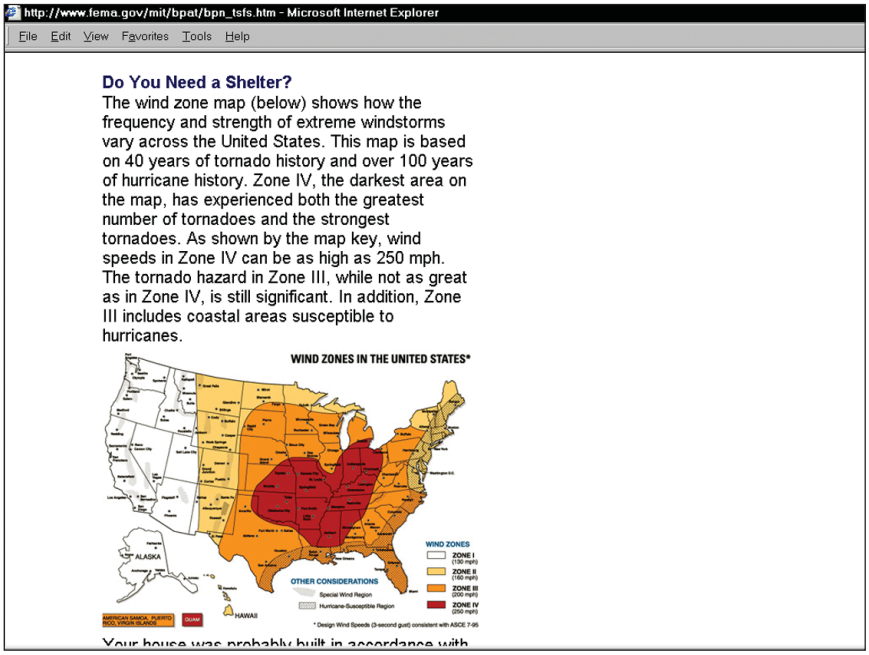
Source: http://www.pmel.noaa.gov/~bernard/senatec.html

**NOTE:*
*Recent findings indicate that tsunamis are also possible along the Atlantic Ocean coastal areas of Virginia and North Carolina. As more information become available, these areas may also wish to include tsunamis in their risk assessment.*

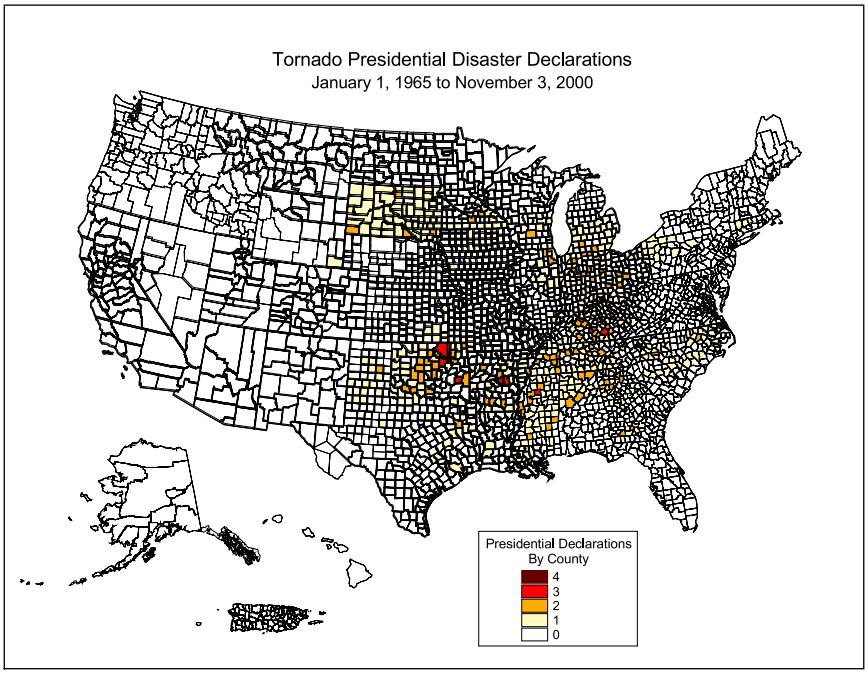
# Tornadoes

1 Go to the http://www.fema.gov/graphics/library/wmap.gif Website. This page shows the wind zones throughout the United States. These wind zones are based on historical information on tornadoes and hurricanes. The map below illustrates areas where Presidential declarations have been issued for tornadoes in the past.

2 Locate your community or state on the US Wind Zone map.




Source: hhttp://www.fema.gov/graphics/library/wmap.gif



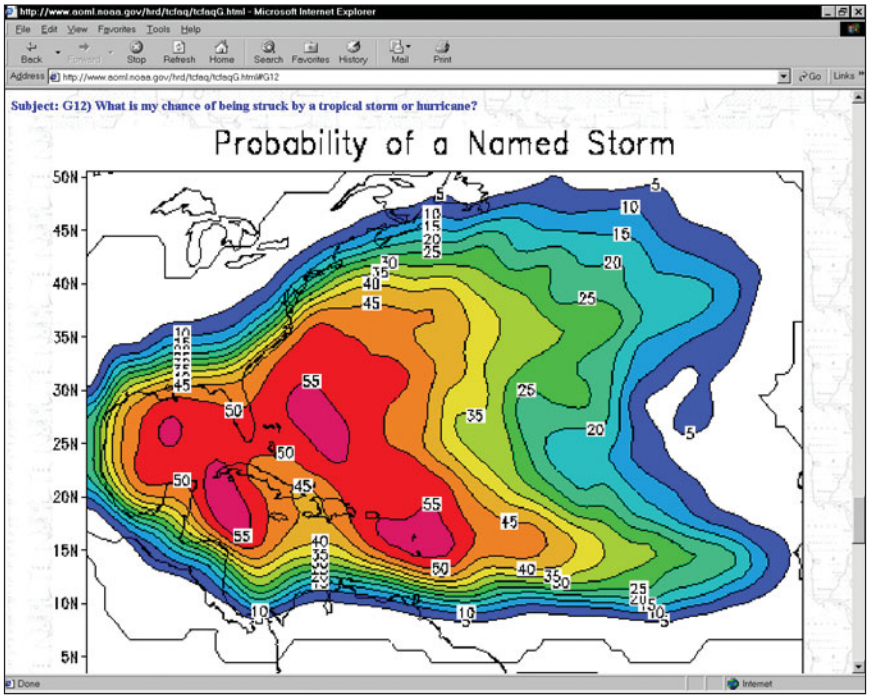

Source: FEMA

3 If you are not located in one of the four colored zones or special wind regions on the map above, you can probably avoid conducting a tornado risk assessment at this time. However, you should confirm your findings with your state meteorologist or emergency manager.

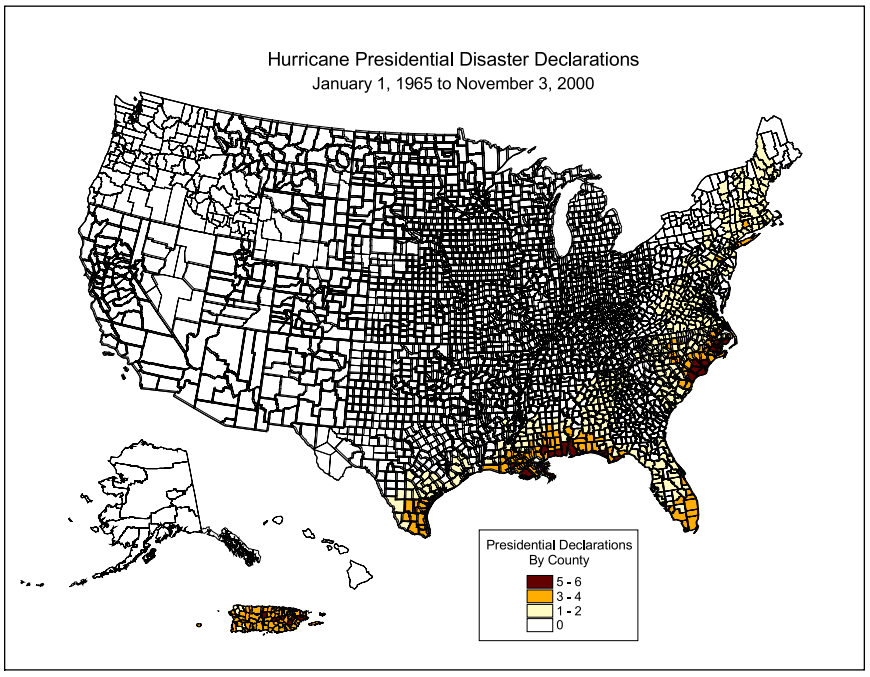
4 If you are located in one of the four colored zones or special wind regions on the map above, then you should proceed to Step 2 to profile your tornado hazard.

# Coastal Storms

1. Go to the http://www.aoml.noaa.gov/hrd/tcfaq/tcfaqG.html#G12 Website. This page illustrates the probabilities of a named storm for the Atlantic Seaboard and the Gulf of Mexico. The map below illustrates where Presidential declarations have been issued for past hurricanes.
2. Locate your community or state on the coastal storm probability map.
3. If you are not located in a coastal storm probability zone you can probably avoid conducting a coastal storm risk assessment at this time. However, you should confirm your findings with your state coastal zone manager or floodplain manager.
4. If you are located in a coastal storm probability zone, then you should proceed to Step 2 to profile your coastal storm hazard.

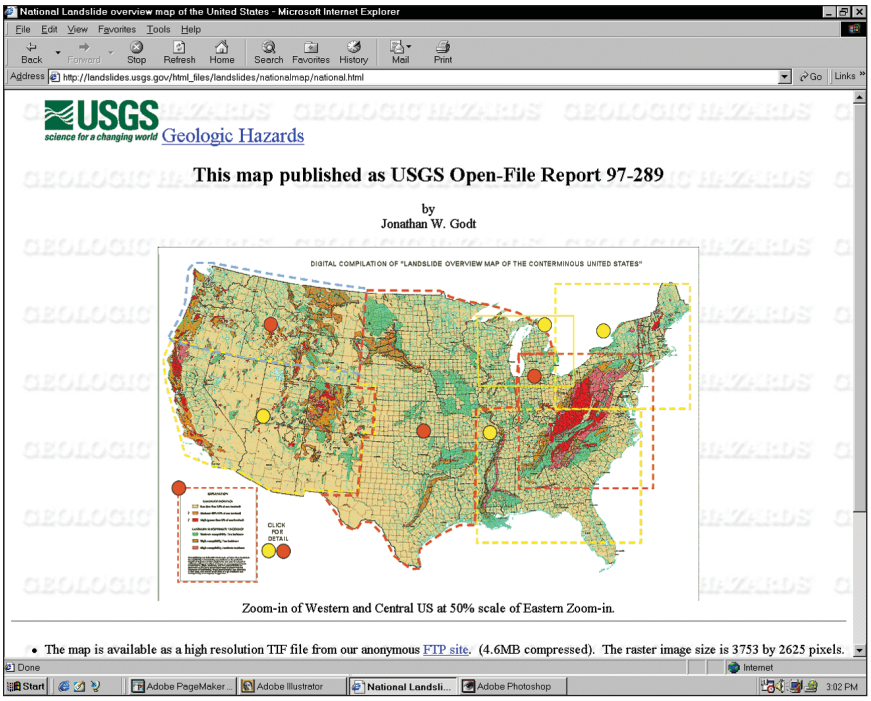



Source: http://www.aoml.noaa.gov/hrd/tcfaq/tcfaqG.html#G12




Source: FEMA

# Landslides




Source: http://landslides.usgs.gov/html_files/landslides/nationalmap/national.html

1. Go to the http://landslides.usgs.gov/html_files/landslides/nationalmap/national.html Website. This page illustrates large-scale landslide risk areas.

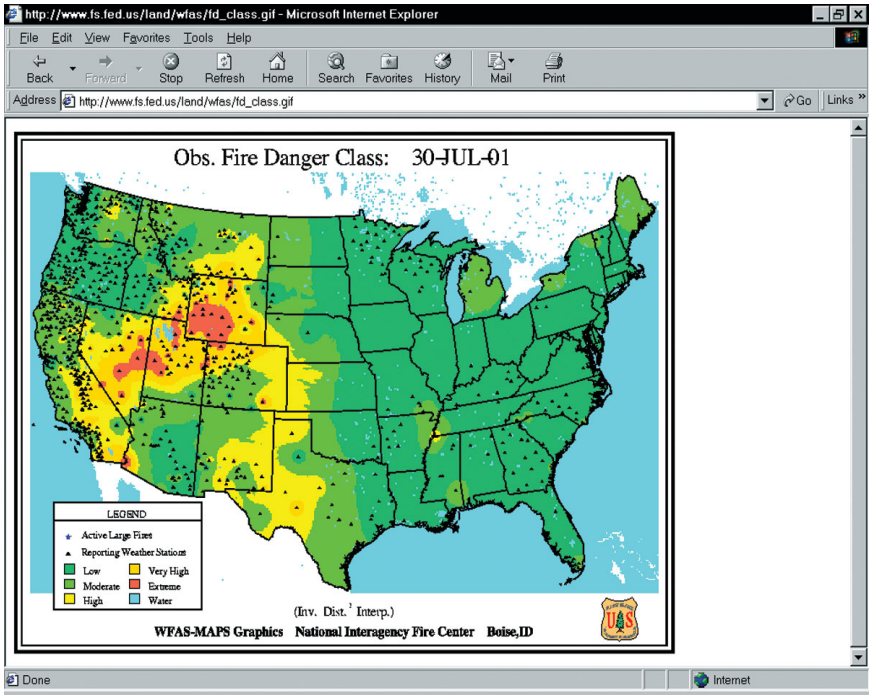
2. Locate your community or state on the landslide hazard map. The Website listed above allows you to zoom in to different regions for a closer look at the landslide risk. While this map gives a broad indication of large-scale risk at a national scale, it is important to know that landslides should be evaluated at a local scale. The map shown above is not suitable for small-scale, community-level hazard identification.

3. You should discuss landslide potential with your state geologist, who can be found at http://www.kgs.ukans.edu/AASG, and with your local public works director.

4. If either your state geologist or local public works director indicates a landslide risk in your community or state, you should proceed to Step 2.

# Wildfires

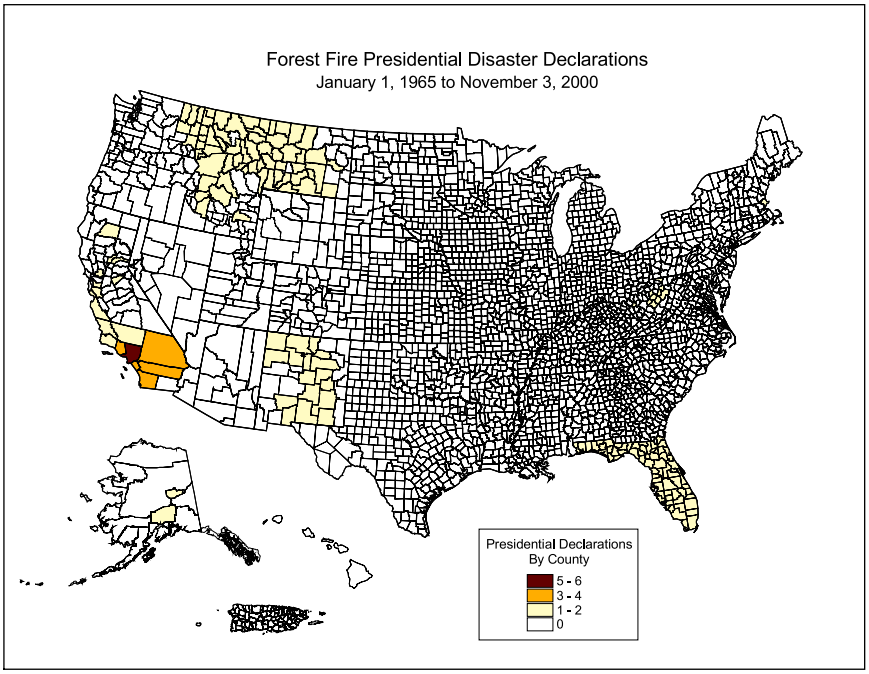
1. Go to the http://www.fs.fed.us/land/wfas/fd_class.gif Website. This page illustrates the current fire danger conditions and changes daily based on current and past weather, fuel types, and fuel moisture. The map below illustrates where Presidential declarations have been issued for forest fires in the past.



Source: http://www.fs.fed.us/land/wfas/fd_class.gif

2. Locate your community or state on the fire danger map.

3. If you are located in or near a low to moderate fire danger class and not located near forest, grasslands, or dense wooded areas then you have a relatively low wildfire risk and probably can avoid conducting a wildfire risk assessment at this time. However, you should confirm your findings with your state fire marshal, forestry department, natural resources department or park service.



Source: FEMA

4. If you are located in or near a dense woodland, forest or grassland area, or have a high to extreme fire danger class, have experienced a prolonged dry period, or have experienced past wildfires, you should proceed to Step 2 to profile your wildfire hazard.

# Summary

When you're finished with Step 1, you'll have a list of hazards that could affect your community or state. At this point, it isn't necessary to know anything specific about the hazards except that they are likely to occur.

You will also have a list of plans, reports, Websites, articles, and other resources that can help you later in the process as you determine how these hazards can affect your community.

Through your research, you will begin to foster relationships with experts in the state and local community. This network will continue to be of use to the Planning Team as you continue to analyze the effects of the hazards, and throughout the planning process.

**Keep your research handy** because after your risk assessment is complete, you will use this information to help complete your hazard mitigation plan as part of the third phase in the Natural Hazard Mitigation Planning Process.

After you have identified all of your hazards and determined which hazards are most prevalent in your community or state

Go to Step 2

to use the information you have gathered to develop hazard profiles.